REMARKS

Claims **1-27** are pending in the application.

Claims **1-27** stand rejected.

Claims **13, 18** and **23-27** have been amended.

Rejection of Claims under 35 U.S.C. §101

Claims 13-27 stand rejected under 35 U.S.C. §101 on the basis of the assertion that the claimed invention is directed to non-statutory subject matter. In view of the amendments submitted herewith, Applicants respectfully submit that Claims 13-27 are now in condition for allowance.

The Office Action asserts that "the means and modules of claims 13 and 18 can be software _per se_ (see paragraphs [0064] and [0065]) and is directed to a non-statutory subject matter." Applicants respectfully traverse this rejection. However, to expedite prosecution, Applicants have amended each of Claims 13 and 18 to recite a processor for performing the means and modules of Claims 13 and 18, respectively. Applicants respectfully submit that these amendments overcome the Examiner's rejection of Claims 13-22.

With respect to Claim 23, the Office Action asserts that "the claim is drawn to a form of energy". Responsive to this rejection, Applicants have amended each of Claims 23-27 to recite a "computer-readable storage medium". Applicants respectfully submit that these amendments overcome the Examiner's rejection of Claims 23-27.

Rejection of Claims under 35 U.S.C. §102

Claims 1-9 and 13-27 stand rejected under 35 U.S.C. §102(a) as being anticipated by U.S. Patent Publication No. 2003/0074528 by Soejima, _et al._ (_Soejima_). To the extent that they

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might be applied against the amended claims, Applicants respectfully traverse each of these

rejections. Applicants respectfully submit that the argument presented below with respect to

independent claim 1 is generally applicable to claims 1-9 and 13-27, as independent claims 13,

18, and 23 generally require the same disputed limitations of claim 1, and claims 2-12, 14-17,

19-22, and 24-27 depend from respective independent claims. Exemplary claim 1 recites:

> A method comprising:
> **determining** a first specification for a first set of needed storage regions, wherein the
> first set of needed storage regions is needed to perform an operation on a logical
> volume, and the first set of needed storage regions satisfies an intent of the logical
> volume, wherein the intent comprises an intended configuration for implementing
> the logical volume, and a rule is a portion of the intent associated with the logical
> volume;
> searching a plurality of existing storage regions for a corresponding existing storage
> region for each needed storage region in the first set of needed storage regions;
> and
> if no existing storage region is found corresponding to a first needed storage region in the
> first set of needed storage regions, determining a second specification for a
> second set of storage regions to be acquired.

For the purposes of addressing the rejections asserted by the present Office Action, Applicants

respectfully submit that independent claims 13, 18 and 23 recite materially similar limitations.

Applicants respectfully submit that a claim is anticipated only if each and every element

as set forth in the claim is found, either expressly or inherently described, in a single prior art

reference." *See Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d

1051, 1053 (Fed. Cir. 1987). Further, the identical invention must be shown in as complete

detail as is contained in the . . . claim." *See Richardson v. Suzuki Motor Co.*, 868 F.2d 1226,

1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Applicants respectfully submit that *Soejima* does

not anticipate independent claim 1, because certain elements, specifically recited in claim 1, are

absent from *Soejima.*

Specifically, independent claim 1 recites "determining a first specification . . .", the

Office Action refers (Office Action of July 16, 2007 ("OA") p. 3, ¶4) to paragraphs 0017-0019

of *Soejima*, which state:

> "In accordance with an aspect of the present invention, there is provided a volume
> management method for setting at least a logical volume over a plurality of
> physical storage devices, said volume management method comprising the steps
> of:
>
> receiving a volume creation request specifying information on a requested storage
> capacity and information on requested average performance;
>
> forming a judgment as to whether or not there exists an unoccupied area
> satisfying the requested storage capacity throughout the storage devices"

See Soejima, ¶17-19. In particular, the Office Action appears to equate *Soejima's* volume

creation request (from paragraph 18) with the claimed "first specification for a first set of needed

storage regions." Applicants respectfully disagree. While *Soejima*'s volume creation request

may include information about storage capacity and average performance, there is nothing in the

cited portion of *Soejima* teaching or suggesting that the request include *a specification of a set of*

needed storage regions. Similarly, because *Soejima* is silent as to the first set of needed storage

regions, there is no teaching or suggestion that the storage regions are needed to perform an

operation on a logical volume. The Office Action references paragraph 0017 (*e.g.,* "setting at

least a logical volume over a plurality of physical storage devices"), but this fails to teach

storage regions needed for the performance of an operation on an existing volume, and

particularly that *Soejima*'s request, *i.e.,* that which the Office Action equates with the claimed

first specification, includes such a set of needed storage regions.

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The Examiner has courteously responded to this argument, asserting that "The storage capacity is the amount of storage area that the manager wants to create from the storage device and the average performance is the average access time to said storage area in said storage device." *See* OA p.9, ¶3. Respectfully, the cited text describes the overall attributes of the logical volume, rather than a "specification for a first set of needed storage regions". An important distinction exists here between the attributes of a singular logical volume in the reference and a plural set of things described in the recited "first set of needed storage regions". This distinction is articulated within the cited text of *Soejima* from the teaching that "there is provided a volume management method for setting at least a logical volume over a plurality of physical storage devices", followed by the recitation of "a volume creation request specifying information on a requested storage capacity and information on requested average performance". *Soejima*'s specifying refers to characteristics of the logical volume, not needed regions of the physical storage. This distinction, which is present in *Soejima*, is even more clearly articulated in Applicants' claim 1, which recites "a first specification for a first set of needed storage regions, wherein the first set of needed storage regions is needed to perform an operation on a logical volume". Applicants' claim clearly distinguishes between the storage regions, to which the claimed specification is directed, and the separate and distinct concept of a logical volume. Applicants respectfully assert that the cited text of *Soejima* teaches only the latter.

As to the claimed "intent of the logical volume" for which the first set of needed storage regions are needed, the Office Action alludes to paragraph 0019. *See* OA p. 3, ¶4. However, this paragraph simply recites "forming a judgment as to whether or not there exists an unoccupied area satisfying the requested storage capacity throughout the storage devices." Applicants respectfully submit that this passage contains no teaching or suggestion of an "*intent*

of the logical volume". The Office Action supplements this quotation with the argument that "the term intent used in the language format presented in claim 1 is reasonably referring to the intention to have a storage volume is to store data and to retrieve data from once it is stored."

Applicants have amended claims 1, 13, 18 and 23 to further recite "and wherein the intent comprises an intended configuration for implementing the logical volume, and a rule is a portion of the intent associated with the logical volume." Applicants respectfully submit that this amendment, which is supported in Figure 1, reference number 110 and at page 7, paragraph 29 of the present application, clarifies the definition of intent. This definition is further supported at Claim 1 of United States Patent #7,143,259, which is the patent issuing from co-pending Application Serial Number 10/324,858 incorporated by reference in its entirety at page 5, paragraph 23 of the present application.

Applicants further note that the cited text of *Soejima* fails to teach "determining a first specification for a first set of needed storage regions", as is recited in exemplary claim 1. The Office Action points to paragraph 18 as teaching the determining step. *See* OA p. 3, ¶4. Paragraph 18 teaches "receiving a volume creation request specifying information on a requested storage capacity and information on requested average performance". Applicants respectfully submit that "receiving" does not teach determining, the two operations being, in fact, distinct from one another, and as evidence of this distinction point to the fact that applicants have illustrated separate receiving (*e.g.*, "obtaining" step 510) and determining (step 514) in Figure 5 of the present application. The Examiner has courteously addressed similar arguments at page 8 of the present application. In response to similar arguments, the Office Action states:

> ". . . In paragraph [0018] Soejima discloses a volume management method
> includes a step of receiving a request to create a logical volume over a physical

storage device, wherein the requirements comprise the information regarding the storage capacity and average performance. The storage capacity is the amount of storage area that the manager wants to create from the storage device and the average performance is the average access time to said storage area in said storage device. Therefore, the request includes a specification of a first set of needed storage region; wherein the specification comprises the storage capacity and the average performance, and the first set of needed storage region is the storage area in the storage device which the volume manager is set to be created."

See OA, p. 8, ¶3. Applicants respectfully submit that the Office Action's response does

not address the critical distinction between <u>receiving</u> a request (as purportedly taught by

Soejima) and <u>determining</u> a specification (as articulated in Applicants' claim) and that the

two are separate and distinct actions, as demonstrated above. Obviously, had such a

relationship been intended by *Soejima*, such would have been made evident at the outset.

Regarding the claimed searching operation, the Office Action refers to paragraphs 0022

and 0024 of *Soejima* (FOA, p. 3, ¶5), which state:

"In accordance with another aspect of the present invention, there is provided a volume management method for searching a storage apparatus comprising a plurality of physical storage devices, on which at least one logical volume is set, for an unoccupied area used by a new volume over some of said physical storage devices, said volume management method comprising the steps of:

. . . forming a judgment as to whether or not all volumes, which include existing volumes and the new volume supposed to be added to the existing volumes, each satisfy its requested average performance by referring to information of requested average performance on a storage means for each of the existing volumes which share any of the storage device with an unoccupied area; and"

See Soejima, ¶22-24. While Soejima teaches searching a storage apparatus for an unoccupied

area used by a new volume, the reference fails to teach or suggest searching existing storage

regions for *a corresponding existing storage region* for *each needed storage region in the first*

set. As noted in paragraph 0024 of *Soejima*, the search is used to form a judgment as to whether

or not *all* volumes satisfy a requested average performance. Again, the Office Action appears to

equate the claimed "first set of needed storage regions" with the information in *Soejima*'s

"request," *i.e.*, information about storage capacity and average performance. Neither paragraph

0022 nor 0024 teach or suggest searching for existing storage regions corresponding to *Soejima*'s

information about storage capacity or average performance. The Examiner has courteously

responded to arguments in this regard by asserting:

> "Paragraph 0024 discloses a method of judging whether or not all volumes, which
> include existing volumes and new volume supposed to be added to the existing volumes,
> each satisfy its requested average performance. By doing so, the volume manager has to
> search in a plurality of existing volumes for a storage area that is needed to create a first
> set of logical volume."

See OA, p. 11, ¶1. Applicants respectfully submit that this argument does not bridge the gap

between the cited text and Applicants' recited limitation of "searching a plurality of existing

storage regions for a corresponding existing storage region for each needed storage region in the

first set of needed storage regions". Applicants' respectfully submit that the cited text fails to

refer to any correspondence between an existing storage region and a needed storage region. The

Office Action's reading of Soejima requires an interpretation of Applicants' claim that renders

meaningless the "corresponding existing storage region for each needed storage region"

limitation. Respectfully, Applicant submits that, as stated in M.P.E.P. 2143.03, citing *In re*

Wilson, 424 F.2d 1382, 165 USPQ 494, 496 (CCPA 1970), "[a]ll words in a claim must be

considered in judging the patentability of that claim against the prior art."

Thus, Applicants respectfully submit that *Soejima* does not anticipate independent claim

1, because certain elements, specifically recited in claim 1, are absent from *Soejima*.

Specifically, *Soejima* does not teach the claimed "first specification for a first set of needed

storage regions." Further, *Soejima* does not teach the claimed "intent of the logical volume,

wherein the intent comprises an intended configuration for implementing the logical volume, and

a rule is a portion of the intent associated with the logical volume". *Soejima* also teaches neither

the determining steps nor the searching step articulated in claim 1. Accordingly, the applicants respectfully submit that independent claims 1, 13, 18, and 23 are allowable over *Soejima*. Claims 2-12, 14-17, 19-22, and 24-27 depend from independent claims 1, 13, 18, and 23, and are allowable for at least this reason.

Rejection of Claims under 35 U.S.C. §103

Claims 10-12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Soejima* in view of Applicant Admitted Prior Art (AAPA). Applicants respectfully traverse both the Office Action's designation of Applicant Admitted Prior Art and the substantive argument of the rejection. Further, Applicants respectfully submit that claims 10-12 depend from and further patentably distinguish independent claim 1, and are therefore allowable on the basis of their dependence from an allowable independent claim.
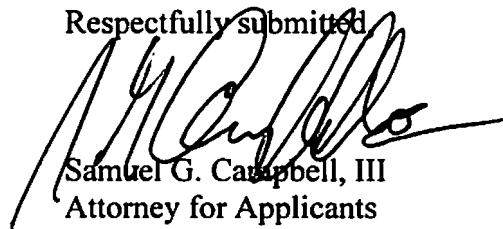
CONCLUSION

In view of the amendments and remarks set forth herein, the application is believed to be in condition for allowance and a notice to that effect is solicited. Nonetheless, should any issues remain that might be subject to resolution through a telephonic interview, the Examiner is invited to telephone the undersigned at 512-439-5084.

If any extensions of time under 37 C.F.R. § 1.136(a) are required in order for this submission to be considered timely, Applicant hereby petitions for such extensions. Applicant also hereby authorizes that any fees due for such extensions or any other fee associated with this submission, as specified in 37 C.F.R. § 1.16 or § 1.17, be charged to deposit account 502306.

Respectfully submitted,

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